

Part I. of Catalogue of a Collection of Ceylon Araneidea lately received from Mr. J. Nietner, with Descriptions of new Species and Characters of a new Genus. By the Rev. O. P. CAMBRIDGE. Communicated by JAMES SALTER, Esq., F.R.S., F.L.S.

(PLATES XI., XII., & XIII.)

[Read Feb. 4, 1869.]

THE present paper includes about one-third of the collection, of which, as far as I am able to ascertain, the greater number are undescribed. Some rough sketches, chiefly of structure, details, and specific differences, are added. These sketches make no pretension to anything finished or artistic; but it is hoped that they may assist arachnologists in determining the species described.

List of species included in Part I. :—

<i>Mygale radialis</i> , n. sp.	<i>Theridion annulipes</i> , n. sp.
<i>Cheiracanthium incertum</i> , n. sp.	— <i>spiventrtris</i> , n. sp.
<i>Tegenaria civilis</i> ( <i>Sund.</i> ).	— <i>albomaculosum</i> , n. sp.
— <i>torva</i> , n. sp.	<i>Dolichognatha Nietneri</i> , n. gen. et sp.
<i>Pholcus Ceylonicus</i> , n. sp.	<i>Tetragnatha decorata</i> ( <i>Bl.</i> ).
— <i>distinctus</i> , n. sp.	— <i>cultra</i> , n. sp.
<i>Argyrodes fissifrons</i> , n. sp.	— <i>argentula</i> , n. sp.
<i>Theridion tepidariorum</i> ( <i>C. Koch</i> ).	— <i>Ceylonica</i> , n. sp.
— <i>lutipes</i> ( <i>Camb.</i> )	

## Fam. MYGALIDES.

### Genus MYGALE.

MYGALE RADIALIS, n. sp. Pl. XI. figs. 1 to 8.

♂ ad. Length 4 lines.

*Cephalothorax* broad, flattened, oval, rather broader in front than behind, slightly truncate at each extremity, and furnished sparingly with hairs and fine bristles; at the junction of caput and thorax is a deep, curved, transverse indentation; the curve directed forwards; the other normal grooves and indentations are well marked. The colour of the cephalothorax is a dark yellow-brown suffused with blackish at the eyes; blackish lines and markings follow the converging grooves of the thoracic region, and there is a largish somewhat triangular black patch behind each lateral eye of the hinder row, and a black line, interrupted at the thoracic junction, bisects the cephalothorax longitudinally.

*Eyes* eight, near the fore margin of upper part of caput, in two transverse lines or rows, near together and almost straight; the two central eyes of the front row are on a slight gibbosity, and nearer together than each is to the lateral eye on its side; these laterals are the *largest*,

and the centrals of the hinder row the *smallest* of the eight; each hind lateral eye is very near to the hind central on its side: the eyes of the front row are very close above the insertion of the falces.

*Legs* rather long, strong; relative length 4, 1, 2, 3; the difference between those of the 4th and 1st pairs consists in the respective lengths of their tibiæ and metatarsi; they are rather paler in colour than the cephalothorax, and are furnished with hairs, bristles, and strong spines: the tibiæ of the legs of the first pair are somewhat enlarged at their fore extremities; on the inner side below the enlargement they are armed with a long, strong, slightly curved, and rather obtusely pointed black spine: each tarsus ends with two strong, curved, thickly pectinated claws, beneath which is a third, smaller and abruptly bent downwards.

*Palpi*: these issue from the extremities of the maxillæ, and are long, similar in colour to the legs, and furnished with hairs, bristles, and slender spines: the *radial* joint is nearly equal in length to the humeral; it is very strong, and somewhat convexly oval, or tumid, in form; near the outer extremity of this joint is a sort of depression, close to which are two clusters of short strong spines; the cluster nearest to the digital joint consists of a compact group of four spines, the other cluster contains a greater number, but they are shorter, and their points converge towards each other: the *digital* joint is short, broader at its extremity than at its base; the former is emarginate: the *palpal organs* consist of a small, irregularly globular, corneous bulb, prolonged into a longish sinuous projection, which terminates in a slender sharp point directed outwards.

*Falces* strong, rather prominent and arched in front; similar to the cephalothorax in colour; furnished with hairs and a small group of not very conspicuous, short, black spines at their upper extremities. The falces are about equal to the caput in length.

*Maxillæ* strong, straight, divergent, and with a slightly prominent point at their inner extremities near the articulation of the palpi.

*Labium* short, narrower at the apex than at the base; the former rather roundly truncate: the junction of the labium and sternum is deeply depressed.

*Sternum* oval; broader and more pointed behind than in front; this part (with the maxillæ and labium) is furnished with hairs, and is similar in colour to the legs and palpi.

*Abdomen* oval; of a dark blackish-brown colour tinged with yellow above; beneath it is yellowish; it is not quite equal to the cephalothorax in length, and is furnished with hairs and bristles. In the specimen examined the spinners were unfortunately wanting.

A single adult ♂ was contained in the collection of spiders received from Mr. Nietner.

## Fam. DRASSIDES.

Gen. CHEIRACANTHIUM (Koch), *Clubiona* (Bl.).

CHEIRACANTHIUM INCERTUM, n. sp.? Pl. XI. fig. 9.

♀ adult, length 3 lines. (Another individual exceeded 4 lines.)

*Cephalothorax* oval, broader before than behind, also truncate before and slightly compressed on the sides; it is much arched above, and the profile line of caput and thorax describes a strong curve; the junction of these two portions is well marked, but the other normal furrows and indentations are less strongly defined. Its colour is yellow, darkest forwards, and suffused with brown at the eyes; it is very sparingly furnished with hairs.

*Eyes* in two transverse nearly straight rows near the fore margin of the caput, and rather close to each other; they are small, and do not differ greatly in size, those of the hinder row are almost equidistant from each other, those of the fore central pair are visibly nearer to each other than each is to the fore lateral eye on its side; those of each lateral pair are almost contiguous, and are obliquely situated on a small tubercle.

*Legs* moderately long, and not very strong; colour pale yellow, sparingly furnished with hairs and a few small black spines; the latter principally on the metatarsi and tarsi; the latter terminate with two curved black pectinated claws, beneath which is a tuft of black hairs. Relative length 1, 4, 2, 3.

*Palpi* rather long, slender; digital joints long, and slightly enlarged at their extremity, which is suffused with brownish; otherwise the colour of the palpi is similar to that of the legs.

*Falces* long, strong, nearly perpendicular: prominent near their base in front, and excavated near their extremities on the inner side. Colour deep rich glossy brown.

*Maxillæ* long, straight, parallel, enlarged and rounded at their extremities.

*Labium* rather more than half the length of the maxillæ; oval in form, and truncate at the apex, which is slightly emarginate. The colour of the maxillæ and labium is a deep yellow brown, palest at their bases and extremities.

*Sternum* heart-shaped, sparingly furnished with hairs, and of a yellow colour.

*Abdomen* oval, longer than cephalothorax, over base of which it projects considerably; it is of a pale dull yellowish colour, furnished with hairs and with a few long, fine, erect, blackish bristles on the upperside; the sexual organs are simple in form and of a reddish-brown colour.

Two adult females were contained in the collection received from Mr. Nietner.

## Fam. AGELENIDES.

## Genus TEGENARIA.

TEGENARIA CIVILIS, *Walck. Hist. Nat. des Ins. Apt.* tom. ii. p. 7. l. 16, fig. 1; *Koch, Die Arach.* Bd. viii. p. 37, tab. 264. figs. 618, 619; *Sund.*

*Agelena civilis*, *Vet. Akad. Handl.* 1831, p. 127; *Lister, Hist. Animal. Angl. de Aran.* Titulus 17, p. 59, tab. 1. fig. 17.

*Tegenaria civilis*, *Blackw. Brit. and Irish Spiders*, p. 166, pl. 12. fig. 107.

Adults of both sexes of this spider, indistinguishable from European (Continental) and British specimens, were contained in Mr. Nietner's collection. *T. civilis* seems to be a widely dispersed spider; it is found all over Europe, and Mr. Blackwall received it from Canada in a collection of spiders made in that country by Prof. Potter (*Ann. & Mag. Nat. Hist.* Jan. and Feb. 1846). I have myself captured it in Egypt, Syria, and Palestine. In England it is one of our most abundant house-spiders, occurring very commonly in unused rooms, among old papers, and in empty boxes that have lain by for some time. Very possibly individuals may have been transmitted in packages of goods from one part of the world to another, which would account in some measure for its wide range.

TEGENARIA TORVA, n. sp. Pl. XI. figs. 10, 11, 12, 14, 15, 16, 17, 18, 19, 20.

♂ adult, length 6 lines.

*Cephalothorax* broad, round oval behind, a little elongate and compressed laterally before; moderately convex above; normal furrows and indentations tolerably defined, one of these, running backwards longitudinally from the point of junction of caput and thorax, is narrow and deep: colour yellow brown, with a darker brown broad longitudinal band including and running back from the eyes to the hinder extremity; the sides of cephalothorax, as well as some pale longitudinal streaks on the fore part of the dark central band, are furnished with brightish yellow hairs. Clypeus impressed, slightly exceeding in height the space between the fore and hind central pairs of eyes, and furnished with coarsish pale hairs; a few coarse black hairs or bristles are also directed forwards from between and behind the eyes.

*Eyes* eight, not very unequal in size, in two transverse rows on the fore part of the caput; the hinder row is longest and straight, the front row slightly curved (the curve directed forwards); the eyes of the hinder row are equal in size and equidistant from each other; those of the fore central pair are the smallest of the eight, and further

from each other than each is from the fore lateral on its side; the space between the fore and the hind lateral on either side is about equal to an eye's diameter; that between the fore and hind centrals is nearly half as much again.

*Legs* very long, moderately strong, tapering, and of a brownish-yellow colour, furnished with long yellowish hairs and blackish spines; each tarsus ends with *two* pectinated claws, beneath which is a tuft of brown papillæform hairs; their relative length is 1, 4, 2, 3; those of the third pair are but little more than half of that of those of the first; the length of these is rather more than three and a half times that of the spider itself.

*Palpi* similar to the legs in colour; not very long, but rather strong: *radial* joint longer and stronger than the cubital, and broader at its extremity than at its base; it is furnished with a pointed tuft of black hairs at its extremity on the outer side: *digital* joint narrow, oval, pointed at its extremity; it is longer than the radial joint, and has a long narrow pointed oval patch on its upperside forwards densely clothed with the short, erect, dark-brown, papillæform hairs: the hairs on the humeral joint are thickest and longest on the underside, and the same joint has some strong black spines on its upperside forwards: the palpal organs are highly developed and rather complicated; they consist of a prominent, somewhat circular lobe produced at its fore extremity into a strong recurved and somewhat concave corneous process, terminating in a sharp point; in front of this, from near the centre of the lobe, springs a long, curved, pale, semitransparent process dilated at its extremity, which extends to, and is almost in contact with, the commencement of the concavity of the digital joint; at the outer extremity of the before-mentioned lobe is a short, strong, obtuse, dark prominence, from just above which springs a longish slender black spine; this spine curves round prominently outwards, and, returning, has its fine point near the commencement of the digital concavity.

*Falces* long, strong, straight, perpendicular, similar in colour to the cephalothorax, and furnished with yellowish hairs.

*Maxillæ* moderate in length and strength, curved inwardly, and slightly inclined towards the labium: they are enlarged at their extremities, where the outer sides are rounded and the inner ones obliquely truncate: in colour, the maxillæ are similar to the falces, and are also furnished with hairs.

*Labium* rather more than half the length of the maxillæ, oblong, narrower at the base than at the apex, which is very slightly emarginate.

*Sternum* oval, longer than broad, truncate forwards, pointed behind, and furnished with hairs, of which many are dark-coloured, coarse, and erect; it is (with the labium) similar to the falces in colour.

*Abdomen* longish, narrow, oval; rather longer than the cephalothorax; it is of a dark yellow-brown colour, marked irregularly on the sides and upperside with black; a blackish oblong patch, enlarged and angulated at its hinder extremity, occupies the fore part of the upperside; the paler portions are clothed with bright goldenish-yellow hairs, mingled with which are coarser ones of a paler hue, appearing almost white in some lights; the underside is yellow brown, clothed with short yellowish hairs, and bisected longitudinally by a narrow line of silvery yellowish hairs.

*Spinners* not very long; those of the inferior pair longest and strongest. The adult female differed only in being larger, the legs not so long, and in the colour of the falces, maxillæ, and labium, which were of deep rich red-brown; the maxillæ also appeared to want the inward curvature, and to be straighter than those of the male.

Mr. Nietner's Ceylon collection contained several individuals of both sexes of this fine *Tegenaria*, which appears to be undescribed.

### Family THERIDIDES.

#### Genus PHOLCUS.

PHOLCUS CEYLONICUS, n. sp. Pl. XI. figs. 13, 21, 22, 23, 24, 25, 26, 27.

♂ adult, length 3 lines.

*Cephalothorax* nearly round; the division of caput and thorax, as also the other normal grooves and indentations, very strongly marked; the thoracic portion rather gibbous, and the caput rather elevated and prominent at the eyes; the clypeus is high, impressed below the eyes, and prominent at its lower margin; its colour is pale yellowish; the ocular region, and a large well-defined patch on either side of the thorax, brown.

*Eyes* in the three groups common to this genus, viz. three large contiguous eyes seated on a tubercle on either side of the upper extremity of the caput; and between these two groups, and in a straight line with the foremost eye of each, is the third group of two very minute eyes.

*Legs* very long, slender; furnished with long hairs; colour darker yellow than the cephalothorax, suffused with brownish yellow near the extremities of the femora and tibiæ, which terminate in a small portion of a clear pale yellow; this, with the genua being suffused with yellow brown, gives the legs a somewhat banded appearance.

*Palpi* short, strong, and, like those of others of this genus, very peculiar in structure; the first (or axillary) joint is small and slight, and projects beyond the articulation of the humeral joint; the extremity of

the projection is furnished with a short, curved, dark red-brown, corneous point; the *humeral* joint is disproportionately large and tumid; the *cubital* is short and strong; the *radial* strong, curved, and tumid; the *digital* somewhat globular at its base, and produced outwards into a long slightly curved projection which has several points at its extremity. The first four of these joints are of a pale yellow colour with a few slight blackish and red-brown markings at their articulations or extreme edges: the digital joint is suffused with red-brown, principally towards its extremity; all the joints are furnished with a few dark hairs. The *palpal organs* are large and highly developed, consisting of a pale yellow, circular, basal corneous lobe, with a long, dark red-brown, tortuous projection of the same nature furnished with a short, strong, curved point on its outer side; between this point and its extremity this corneous projection is fringed with a closely set fringe of reddish-coloured prominent hairs.

*Falces* small, but strong; conical, vertical; furnished with hairs, and of a dark yellow-brown colour.

*Maxillæ* rather long, somewhat pointed, and smaller at their extremities than near the base; greatly inclined towards, over, and slightly behind the labium, their extremities being almost in contact. In colour the maxillæ are dark yellow-brown, paler at the extremities.

*Labium* short, broad, broadest in the middle, narrowest at the base; the apex, which is somewhat rounded, is of a pale yellow colour, the remainder being similar to that of the maxillæ.

*Sternum* heart-shaped; of a pale yellow colour, with a large, central dark yellow-brown patch of a somewhat similar shape, having circular indentations all round its margin opposite to the articulations of the legs.

*Abdomen* longish, narrow, oval, abruptly and perpendicularly truncate behind, where it is also rather elevated; *i. e.* it does not slope, as in most spiders, when looked at in profile. Its colour is a dull yellowish whity-brown; a series of three or four largish and irregularly angular brownish patches occupies the medial line of the upperside; these patches are all edged on the outside with a line of silvery white hairs: a broad band of brown similarly edged occupies the entire medial line of the underside. *Spinners* short, dark brown, tinged with reddish.

The adult ♀ resembles the ♂ in colour and markings. Sexual organs prominent; the aperture circular, edged with deep red-brown; and from and within the concavity issues a short, strong, dark reddish brown epigyne, which curves backwards: a patch in front, and connected with the aperture, is of a dark yellow-brown colour.

Four adult specimens (two ♂ and two ♀) were contained in Mr. Nietner's collection.

*PHOLCUS DISTINCTUS*, n. sp. Pl. XI. figs. 28, 29, 30.

Resembling the foregoing species in size and general appearance, the present one differs in the relative position and size of the eyes, as well as in the form of the abdomen and markings. The eyes of the lateral groups are smaller than in "*P. Ceylonicus*," and the two small eyes of the intermediate group are situated perceptibly *below* the line of the lower eyes of each lateral group.

The colour of the cephalothorax is yellow, with an irregular longitudinal central band and a lateral one on either side of the thoracic region, of a dark blackish-brown colour. The clypeus has two blackish lines, one from the outer side of each eye of the central pair, perpendicular to, and terminating at, the base of the falces. Ocular region suffused with brown. *Falces* yellow. *Sternum* wholly dark brown. *Abdomen* narrow, oval; looked at in profile, it slopes in a curved form to the spinners; its colour is pale yellowish, marked above and on the sides irregularly, though somewhat obliquely, with dull black. An irregular longitudinal central band of a similar colour occupies the underside. The sexual organs differ totally in form from those of "*P. Ceylonicus*," and want the epigyne. The palpi are furnished with long dark bristly hairs, and terminate with a tuft of shorter black ones.

The collection contained a single adult ♀ of this species.

#### Genus ARGYRODES.

*ARGYRODES FISSIFRONS*, n. sp. Pl. XII. figs. 31, 32, 32a, 33, 34, 35, 36, 37, 38.

♂ adult, length  $2\frac{1}{2}$  lines.

*Cephalothorax* longish oval, rather flattened; fore part of caput prominent, and divided transversely by a deep fissure into two lobes, the lower one of which is the strongest; these lobes are both furnished with strong prominent bristly hairs, especially the upper one, the hairs upon which are chiefly directed forwards over the fissure: the normal grooves and indentations are strongly marked, especially that defining the junction of the caput and thorax: the thorax (in profile) is slightly raised above the profile line of the caput: the cephalothorax is of a yellow-brown colour; its margins, indentations, and a longitudinal central line upon the caput are suffused with dusky.

*Eyes* in four pairs, (upon, and at the base of, the hinder lobe of the caput; not very unequal in size; one pair (largest of the eight), seated near its fore extremity, and another pair a little way behind them form a square; and at some little distance below, on each side, behind the base of the fissure, is another pair, the eyes of which are contiguous and seated on a small tubercle.



*Legs* long, slender; relative length 1, 4-2, 3; furnished sparingly with hairs, and similar to the cephalothorax in colour; in some specimens they are faintly banded or clouded with dusky red-brown, particularly at the extremities of the tibiæ.

*Palpi* long, proportionately rather stronger than the legs, and furnished with hairs; the humeral joints are long and bent; the cubitals long, clavate, and bent forwards; radials short, and produced on their outer sides; digitals short, oval. *Palpal organs* directed outwards, not very complicated, consisting of some compactly fitting corneous lobes and processes, and destitute of any very remarkable structural feature; in fact these parts are very similar in general appearance to the palpal organs of several species of our British *Theridia*.

*Falces* long, strong, slightly projecting, protuberant in front, a little divergent, and similar to the cephalothorax in colour.

*Maxillæ* long, strong, inclined towards the labium, their outer marginal line slightly hollow: extremities obliquely truncate on the outer sides, and the inner marginal line rounded.

*Labium* broader than high, somewhat oblong, but roundish-pointed at the apex, which reaches about halfway up the maxillæ; these, with the labium and sternum, are rather darker in colour than the cephalothorax.

*Sternum* of a somewhat triangular form, compressed laterally towards its apex (which is directed backwards), and having by far its shortest side (the base of the triangle) in front.

*Abdomen* oblong, rounded and bluff in front, a little compressed towards the middle; the hinder portion is much produced over and beyond the spinners, the produced part having a bluff termination, near which, on either side, is a slight prominence; the upperside is of a pale brownish-yellow colour, marked with two longitudinal silvery lines which converge and form one line towards the hinder part: these lines are dilated on the sides of the abdomen into two or three irregularly sinuous and oblique silvery lines, strongly margined with deep red-brown, approaching black. *Spinners* prominent, rather nearer to the hinder than to the fore extremity of the abdomen.

The *female* resembles the male in colours and markings; these last, however, are better defined in the former sex. In some specimens of both sexes the abdomen is more or less suffused with silvery spots in addition to the regular lines and markings. In the female the hinder extremity of the abdomen is produced in a long and more or less sharp-pointed form, thus offering a strong contrast to its form in the male. The spinners of the female are also in general nearer to the *fore* than to the *hinder* extremity of the abdomen; her caput wants the deep fissure of that of the

male, its position being marked with a slight transverse constriction, leaving the clypeus only a little prominent and rounded at its lower part.

Thirteen males and six females (adult and immature) were contained in Mr. Nietner's collection; they were found, Mr. N. tells me, commonly in the webs of *Epeïra opuntia*, thus having quasi-parasitic habits similarly to the European and Syrian species *Argyrodes epeïræ* (Simon), and to some species found by M. Vinson (*Aranéides des îles de la Réunion, Maurice et Madagascar*).

Egg-cocoons of this species, also forwarded to me by Mr. Nietner, are very similar to those of *A. epeïræ* (Sim.). Resembling in size and general appearance several other species, it differs from them all in the form of the fore part of the cephalothorax in the adult ♂: in this portion of its structure it comes nearest to *A. epeïræ*; but from this species it differs remarkably in colour and markings.

#### Genus THERIDION.

##### THERIDION TEPIDARIORUM (Koch).

*Koch, Die Arachn.* Band viii. p. 75, tab. 273. fig. 646, and tab. 274. figs. 647, 648. *Blackwall, British and Irish Spiders*, p. 120, pl. 13. figs. 114 a, b, c, d, e.

Eighteen specimens (including adult and immature examples of both sexes) of this species were contained in the collection; and having compared them carefully with Continental and British specimens, I can find no distinction between them. In this species examples occur with the legs annulated as well as plain. The figures given in Koch 'Die Arach.' seem to be far too highly coloured; those in Mr. Blackwall's work are much more truthful in this respect.

##### THERIDION LUTEIPES (Camb. M.S.). Pl. XII. figs. 46 to 51.

♂ adult, length 2 lines; ♀ adult, length  $2\frac{3}{4}$  to 3 lines.

*Cephalothorax* oval, very slightly compressed laterally at caput; clypeus a little prominent below, but slightly impressed immediately below the eyes: the normal grooves and indentations are strongly marked, especially the indentation at the point of junction of the obsolete thoracic segments, thoracic region well arched laterally; caput furnished with bristly hairs: the cephalothorax is glossy, and (together with all the rest of the spider except the abdomen) of a uniform reddish-yellow colour, the grooves and indentations being slightly suffused with dusky.

*Eyes* nearly equal in size; in four pairs; the two central pairs form a

square; the lateral pairs are placed slightly obliquely on tubercles; all, except those of the fore central pair (which are dark-coloured), are of a pearly white edged with red-brown.

*Legs* moderately strong; relative length 1, 4, 2, 3; those of the fourth and second pairs differ but very little in length: those of the first pair are much the longest; all are furnished thickly and conspicuously with long bristly hairs.

*Palpi* short; humeral joint bent; cubital stout, nodiform, prominent, and rather angular on the upperside; one longish black flexuous bristle issues from the angle, and another halfway between it and the base of the joint; radial joint short, produced in a roundish-spatula form at the outer extremity, the produced part terminating with some black flexuous bristles; digital joint large, longer than the radial and cubital together, of pointed oval form, and hairy on the outer side. *Palpal organs* well developed and rather complicated, consisting of some whitish membranous lobes mixed with corneous spines and processes of a deep red-brown colour.

*Falces* strong, slightly longer than the height of the facial space, and a little projecting forwards.

*Maxilla* long and strong, projecting very slightly beyond the falces, obliquely truncate on their outer extremities, and inclined towards the *labium*, which is short, suboval, and a very little hollow at the apex.

*Sternum* heart-shaped and glossy.

*Abdomen* nearly globular, mostly so in the female; it is covered with long, prominent, dark, bristly hairs, and is of a dull leadenish dusky colour, with a series of alternate blackish and white irregular and rather oblique transverse markings on either side of the medial line of the upper part; these markings leave a sort of ill-defined dentated longitudinal central band, in some specimens edged with white; along the hinder part of this band, above the spinners, are several roundish white spots running together (in some individuals) into a broken line or band: this pattern, which bears considerable general resemblance to that on the abdomen of *Theridion nervosum* (Walck.), is almost obsolete in some specimens, and appears to be best defined in the immature female: a broad, central, longitudinal, dark brownish-black band, varying in intensity in different examples, and strongest in the adult male, occupies the underside; this band is edged on both sides by a more or less distinct whitish line.

An adult example of each sex was first captured by myself in a dark closet at the Hôtel d'Orient at Beirût in May 1865; but the MS. description of it not having yet been published, it is now made public for the first time, on the reception of three adult males and fifteen adult and immature females from Ceylon in the collection

sent me by Mr. Nietner. No notice of their habits or habitat accompanied these; but those captured in Syria seemed to be assigned to their proper habitat; and some irregular webs (in which they were found) occupied the corners and angles of the closet. The species may easily be recognized by the uniform red-yellow colour of its cephalothorax and legs &c., as also by its generally hirsute appearance, and by the angular form of the radial joints of the palpi in the adult male; the female differs chiefly in size and the structure of the palpi.

**THERIDION ANNULIPES, n. sp.**

♂ adult, length 3 lines.

In size and form this species is very similar to *T. luteipes*, to which it is evidently closely allied; the two species resemble each other also in structure, and in having the abdomen and legs thickly furnished with longish bristly hairs; but the present species may at once be distinguished by its general colour and markings. The *cephalothorax* is of a brownish-yellow colour, the normal grooves and indentations suffused with brown, and with a tolerably well-defined, reddish-brown, longitudinal, medial band running backwards from the eyes to the medial thoracic indentation; this band is much narrower behind than in front. The *falces*, *maxilla*, and *labium* are of a reddish yellow-brown colour; *sternum* brownish yellow; *legs* and *palpi* yellow, broadly and distinctly annulated with dark brown more or less tinged with red. The abdomen is of a dull-brown colour, with a yellowish leaden tinge, obscurely marked and patched above and on the sides with black, intermixed with small whitish spots and points. Above the spinners, in the medial line, and longitudinally dividing a large blackish patch, is a somewhat dentate yellow-white band.

It is just possible that this may be only a variety of *T. luteipes*, though I am inclined to think that the future discovery of the adult male will prove it to be a distinct species. Two specimens were contained in Mr. Nietner's collection.

**THERIDION SPINIVENTRE, n. sp. Pl. XII. figs. 52 to 56.**

♂ adult, length  $1\frac{1}{4}$  line.

*Cephalothorax* oval, rather depressed; a little constricted laterally at caput; colour yellow, margins black, and a longitudinal medial red band runs backwards from the eyes to the hinder margin; this band narrows behind, and is a little constricted in the middle at the junction of the thoracic segments, which is marked with a short black dash.

*Eyes* not very unequal in size, in four pairs, and seated on slight tubercles; the two central pairs form a square whose anterior side is very slightly longer than the posterior; the eyes of each lateral pair are placed a little obliquely, and the fore one of each is nearer to that of the fore central pair on its side than the hinder one is to the hind central on its side; this causes the hinder row to be the longest and most curved, and the eyes constituting it are about equidistant from each other, while the centrals of the front row are much further apart than each is from the lateral on its side.

*Legs* long, slender, furnished with longish hairs and a few longish fine black spines; relative length 1, 4, 2, 3; but little difference in length between those of the fourth and second pairs; those of the third pair are much the shortest, and those of the first disproportionately long, being at least five times the length of the spider: in colour, the legs are yellow; the genua and a small portion at the extremities of the tibiæ are strongly tinged with reddish orange, and the extremities of the metatarsi of the first and second pairs are black.

*Palpi* short; the radial and cubital joints are both very short, the latter has a long curved black bristle projecting forwards from its upperside, and a shorter one of the same kind issues from the upperside of the radial; digital joint oval, longer than the radial and cubital together.

*Palpal organs* well developed but not very complicated; they have a short, stoutish, blunt, black, corkscrew-form corneous spine projecting forwards from their fore extremity.

*Falces* long, rather straight, not very strong, tapering, and projecting very slightly forwards.

*Maxillæ* long, rather strong, inclined towards the labium, and obliquely truncate at their extremities on the outer sides.

*Labium* short; shorter than broad; somewhat semicircular in form; this part, together with the *falces*, *maxillæ*, and *sternum* (which is heart-shaped), are rather paler in colour than the cephalothorax.

*Abdomen* oblong-oval, a little higher behind than before when looked at in profile; from the highest point it falls rather abruptly to the spinners; it is of a straw-colour, with seven or eight short, strong, obliquely transverse black lines or bars on either side of the medial line, leaving a broad longitudinal space between their inner extremities; the four hinder bars converge (two and two on either side) at their outer extremities, and form a sort of bold dentation; immediately behind these at the commencement of the hind slope of the abdomen is a curved transverse row of four long and strongish, black and very slightly curved spines directed backwards and (each pair on either side) outwards; the two middle ones of these spines issue from two black spots, and several other black spots run from the outer spines downwards in two straight lines which converge to the spinners; each side of the abdomen has a single medial black spot; in addition to

the spines there are on its upperside some long slender pale hairs directed backwards.

A single adult ♂ of this very distinctly marked *Theridion* was contained in Mr. Nietner's collection. The peculiarity of the four superabdominal spines at once distinguishes it from all the species of this genus yet known to me.

*THERIDION ALBOMACULOSUM*, n. sp. Pl. XII. figs. 57 to 60.

♀ immature, length  $\frac{2}{3}$  of a line.

*Cephalothorax* of ordinary form; colour yellow, with a slender black marginal line and a short, medial, longitudinal, dusky streak on the hinder part of caput, ending in a small, somewhat diamond-shaped, dark patch at the junction of the thoracic segments.

*Eyes* in four pairs, or two equally curved rows, the front row shortest, and the curves directed from each other; the two central pairs form a square whose fore side is very slightly longer than the hinder one; the lateral pairs are seated on slight tubercles, and the fore eye of each is nearer to that of the fore central pair on its side than the hinder one is to that of the hind central pair on its side: the colour of the fore central pair is black, the rest are pearl-white with black margins.

*Legs* rather long, slender, furnished with hairs and a very few slender black spines: relative length 1, 4, 2, 3, decreasing in about equal proportion; their colour is a pale whitish yellow; the genua and extremities of the tibiæ are tinged with orange, and the extremities of the first and second pairs are blackish, those of the first pair being most conspicuously so.

*Palpi* short, furnished with hairs, and of a pale yellowish colour.

*Falces* not very long, nor strong; *maxillæ* long and strong, inclined towards the labium, and projecting a little beyond the extremities of the falces, and obliquely truncate on their outer extremities.

*Labium* short, and somewhat roundish at the apex; these parts, with the *sternum* (which is broad and heart-shaped), are of a pale yellowish colour.

*Abdomen* short, oval, very convex above, and elevated behind (similar in form to that of *Theridion sisypum*), of a pale yellowish colour, tinged with yellow-brown above, and yellowish beneath: the upperside has a distinctly defined pattern, formed by cretaceous-looking white spots and blotches, and a few black spots on either side of the fore part showing traces of some broken oblique lines; a few other small black spots appear here and there on the sides and upper part, which are furnished with longish, slender, bristly hairs; the pattern alluded to may be described as consisting of six large roundish white spots in the centre, the two fore ones on either side running into each other on their inner sides: the two hinder spots are separated by only a

slender line, and the six form a somewhat pentagonal figure; immediately below the two hindmost spots is a small one of the same colour: and the whole is surrounded by a broken belt of similarly coloured patches, dividing the upper- and undersides of the abdomen.

A single example of this pretty little spider was contained in the Ceylon collection; and, though not adult, the very distinct pattern formed by its abdominal markings seems to stamp it as a distinct species.

DOLICHOGNATHA, nov. gen.

*Cephalothorax* large and elongated at caput.

*Falces* of great length, nearly equal to that of cephalothorax.

*Maxillæ* moderately long and strong, slightly divergent, broader at extremities than at base; extremities slightly obliquely truncated on outer sides.

*Labium* short, oblong; apex roundish-pointed.

*Eyes* in four pairs, or two slightly curved convergent lines; those of front central pair much the largest of the eight, near together, but not contiguous, and seated on a strong, circular, tubercular prominence; those of the hind central pair much the smallest of the eight, seated on slight tubercles and contiguous to each other; those of each lateral pair are seated on a strongish tubercle, and separated from each other by about the diameter of the fore eye.

*Legs* of first and second pairs much the longest and strongest; those of the third pair the shortest.

This genus, which I have with some hesitation founded upon a single interesting spider received from Mr. Nietner, might perhaps be properly considered a *subgenus* of either *Linyphia* or *Theridion*. Resembling the former somewhat in the maxillæ, falces, and relative length of the legs, it yet resembles the latter more in its general appearance, its globular abdomen, and in its palpi. In the four small conical eminences on the abdomen it is very like the genus *Ero* (Koch), which is itself probably only a *subgenus* of *Theridion*; but it *differs* from *Theridion* very decidedly in the form of the maxillæ, and from both *Theridion* and *Linyphia* in the large size of the two fore central eyes. It has affinities also with both *Pachygnatha* (Fam. Linyphiides) and *Tetragnatha* (Fam. Epeirides). On the whole it seems best to keep it separate from all those genera, in either of which it appears to have about equal claim for inclusion.

*DOLICHOGNATHA NIETNERI*, n. sp. Pl. XII. figs. 39 to 45.

♂ adult, length 1 line.

*Cephalothorax* large, rounded behind; caput elongated; occiput a little gibbous, but not abruptly so; a row of strongish hairs directed forwards occupies the medial line of caput; colour pale yellow; the caput and some spots or blotches on the margins and in the medial line behind the occiput are strongly mottled and suffused with brownish black.

*Eyes* in four pairs, or two slightly curved and converging rows on the fore part of caput; those of front row about equidistant from each other, but the two centrals much the largest of the eight, and seated on a large, somewhat circular, tubercular prominence; all the rest are also seated on tubercles; those of each lateral pair are separated from each other by less than the diameter of the smallest; those of the hind central pair are very small (the smallest of the eight) and contiguous to each other.

*Legs* very unequal in length, those of the first two pairs much the longest and strongest, those of the first pair being also longer than those of the second, and those of the third pair are shortest, and a little shorter than those of the fourth; they are furnished sparingly with hairs, bristles, and a few fine spines; colour pale yellow, banded and blotched with deep blackish brown.

*Palpi* short, similar in colour to the legs; *radial joint* rather longer and stronger than the cubital, but destitute of any characteristic projections; *digital joint* longer than both radial and cubital together; its outline is somewhat tortuous, as if twisted from the extreme point, which is elongated and something similar to the digital joint in some species of *Tegenaria*. *Palpal organs* not very complicated, consisting of some closely united corneous pieces, forming altogether a somewhat circular prominent lobe, and apparently a fine closely adhering filiform spine connected with them: in the general appearance of these organs one is strongly reminded of those in some spiders of the genus *Pachygnatha*.

*Falces* very long, strong, almost equal to the cephalothorax in length, slightly inclined backwards towards the sternum, and somewhat prominent in front near their base: when looked at from before, both the outer and inner sides are hollow, and they have three rather fine but sharp teeth on their inner side near their extremities; colour yellow-brown, with a yellow patch at the base on their inner sides.

*Maxillæ* and *labium* (see generic characters).

*Sternum* heart-shaped; colour of this part, as well as of the maxillæ and labium, yellow, blotched and marked with blackish.

*Abdomen* short and nearly globular, furnished on the upperside with four short, but well-defined, conical prominences forming a square, of which the front side is slightly the longest: it is very sparingly fur-



nished with hairs, and is nearly black; spotted, mottled, and marked with yellow and yellowish white; of this latter colour are several short, parallel, curved, transverse streaks on either side at intervals in the medial longitudinal line of the upperside: the hinder portion of each of the conical prominences is also of a pale yellow colour.

A single adult ♂ in the collection of Mr. Nietner from Ceylon.

### Family EPEIRIDES.

#### Genus TETRAGNATHA (Walck.).

TETRAGNATHA DECORATA (*Bl. Ann. and Mag. Nat. Hist. for July* 1864). Pl. XIII. figs. 61 to 68.

Length of the adult ♂  $2\frac{1}{4}$  to  $2\frac{1}{2}$  lines, of the adult ♀ 4 to  $4\frac{1}{2}$  lines.

This species was described by Mr. Blackwall (*loc. cit. sup.*) from two rather mutilated female specimens given to me by Mr. Frederick Bond—to whom they were sent, in a bottle of Coleoptera, by a correspondent in India.

Subsequently I received several examples of the same sex from Bombay, captured and kindly forwarded me by Captain Julian Hobson, among many other new and rare spiders. The collection from Ceylon, now under consideration, contained sixteen specimens, comprising adults of both sexes. The male, which is now recorded for the first time, resembles the female in colour and markings, which last, however, are not quite so distinctly traced as in that sex, the silvery ground-colour being more predominant; but in the form of the abdomen the two sexes differ considerably; the fore part of that of the male entirely wants the two conical eminences, and the hind protuberance is much shorter and less pointed; the *falces* also in the male are less prominent in front, and less strong, though proportionately longer; the *legs* of the first pair are also longer in proportion than in the female. The *palpi* are moderately long and slender; the humeral, cubital, and radial joints are all rather clavate; the radial is long, but the cubital proportionally short; the *digital* joint is oval, with the exterior sides directed outwards; from near the base of this joint there projects a rather long, straight, prominent, sharp-pointed, semitransparent, yellowish, spiny process: both the radial and digital joints are furnished with long bristly hairs; and from the upperside of the cubital joint projects forwards a strong bristle of still greater length, being about three-fourths as long as the radial joint. The *palpal organs* are well developed but simple,

consisting chiefly of a largish, oval, corneous lobe; they have a curved corneous projection at their base on the outer side, and one or two others which project from their extremity.

As no figures of this species have ever yet been published, I have added a rough sketch or two (Pl. XIII. figs. 61 to 68), which will perhaps give some idea of its structure and markings.

This species is closely allied to *Tetragnatha quinquelineata* (Keyserling) "Beschreib. neuer, u. wenig bekannter Arten aus der Familie Orbitelæ (Latr.) oder Epeiridæ (Sund.)," Sitzungsberichte der Isis zu Dresden, 1863, p. 145, pl. 7. figs. 3, 4, 5, 6. The pattern on the abdomen of *T. decorata* corresponds with that given in fig. 3 of *T. 5-striata*; but the form of the abdomen and the structure of the palpi differ decidedly. Fig. 8, in the same plate, resembles almost exactly the peculiar form of the digital joint of the palpus of *T. decorata* ♂; but the spider to which it belongs (*T. ocellata*, Keys., fig. 7) has a totally different pattern on the abdomen (which is also of a different form), and is undoubtedly of a different species: both the species referred to here in Keyserling's work were received from Santa Fé de Bogota (New Granada); and it is a remarkable fact that species of the same genus from these two widely separated countries, New Granada and Ceylon, should present such curious specific *cross-resemblances*, as they may perhaps be not incorrectly termed.

The present species, *T. decorata*, having the specific abdominal design of *T. 5-lineata* with the palpal structure of *T. ocellata*, it would be interesting to find out whether or not Bogota produces another species in which the peculiar form of the abdomen in the female of *T. decorata* is represented.

**TETRAGNATHA CULTA**, n. sp. Pl. XIII. figs. 69 to 75.

♂ adult, length  $1\frac{1}{2}$  line; ♀ adult,  $2\frac{1}{4}$  lines.

♂ adult. *Cephalothorax* short, oval, rounded behind, and laterally compressed before; moderately convex above, with a large and deep depression at the thoracic junction; the other normal furrows and indentations are moderately defined; clypeus low (no higher than the space occupied by the fore and hind central pairs of eyes), and slightly impressed about midway; colour yellow, faintly tinged with a deeper hue on the caput.

*Eyes* eight, small, not very unequal in size, and placed on black spots; they are in four pairs; those of the two central pairs form a square of which the fore side is very slightly the shortest; the eyes of each lateral pair are contiguous, about as far from the hind central eye on

the same side as the two hind centrals are from each other, and but very little in advance of their straight line.

*Legs* long and slender, a little paler in colour than the cephalothorax, and furnished with hairs, and on the femoral, genual, and tibial points are some conspicuous dark spines: relative length 1, 2, 4, 3; those of the *second* pair are perceptibly longer than those of the *fourth*, and those of the *third* pair are very much the shortest.

*Palpi* short; humeral, cubital, and radial joints slight, the latter is a little longer and stronger than the cubital; each of these two has a long, nearly erect, black bristle on its upperside; *digital* joint long, oval, longer than the radial and cubital joints together, and has a longish, prominent, curved, rather obtuse-pointed, semitransparent, corneous, spine-like process rising from near its base. *Palpal organs* large, prominent, and directed outwards; they consist of a somewhat globular corneous lobe with a projecting portion at their extremity; and connected with this portion are one or two short black spines; the colour of the palpi is yellow, the digital joints and palpal organs being tinged with a deeper hue.

*Falces* rather long, strong, a little prominent near their base in front, slightly divergent, and with a short, tooth-like, rather obtuse-pointed, somewhat hooked spine, directed downwards, near their middle, in front; this spine is characteristic of the species, but seems to belong only to the adult male; the falces have also a few teeth on the inner surface near their extremities; and their colour is yellow tinged with a deeper hue.

*Maxillæ* rather long, a little divergent, and enlarged at their extremities.

*Labium* about half the length of the maxillæ, and rounded at the apex.

*Sternum* heart-shaped, and yellowish in colour, the maxillæ and labium being tinged with yellow-brown.

*Abdomen* long oval, somewhat cylindrical, obtuse at each extremity, but the hinder one falls abruptly from the upper edge to the spinners; its colour is pale brownish yellow, the sides and underpart rather closely spotted with shining silvery spots and blotches; on either side of the medial line of the upper part are some obscure black spots arranged longitudinally; one of these on either side is situated about one-third of the distance from the fore margin, the rest are equally disposed on the posterior third part: there is also a similar obscure spot on each side of the abdomen near its hinder extremity: the abdomen in different examples differs in length relatively to the cephalothorax, but seems, as a rule, to *exceed* it in absolute length.

The *female*, as in others of this genus, has the legs shorter than the male, and less conspicuous in their armature; the falces also

are rather shorter, but stronger and more prominent at their base in front. The *abdomen* is much deeper (from the upper- to the underside) and projects backwards a little over the spinners; the sides and upper part are more densely covered with silvery spots, which fit closely together, and are, in fact, separated only by dividing lines. The space between the black spots is itself nearly black, but is somewhat obscured on the hinder portion by silvery spots: the black spots on either side on this portion are also dilated and become roughly and obliquely linear, forming an approach to broken chevrons: on the underside the *abdomen* is of a brownish black, with a largish somewhat obtusely angular (in some individuals nearly semicircular) marking, formed by closely united, small, silvery spots; in some specimens there is a longitudinal bar of the same on either side of the angular marking, and from these bars on either side a short spur runs off inwardly towards the sexual organs, which are small, inconspicuous, and of a red-brown colour.

From this description it will be seen that there is some little diversity in the prevalence and exact arrangement of the silvery markings in the two sexes of this species, as well as in different individuals of the same sex; but their general character is preserved. The curved corneous projection at the base of the digital joint, as also the short tooth-like spine in front of the falces in the male, besides the relative lengths of the different joints of the palpi and the form of the abdomen, serve to distinguish it at a glance from *T. decorata* (Bl.).

Eight specimens (six ♀ and 2 ♂) were contained in Mr. Nietner's Ceylon collection.

*TETRAGNATHA ARGENTATA*, n. sp. Pl. XIII. figs. 76 to 82.

♂ adult, length 2 lines; ♀ adult, 3 to 3½ lines.

The form and markings of the abdomen, as well as the greater relative length of the legs of the first pair, will at once distinguish this species from the last (*T. culta*) to which it is nearly allied, though of larger size. The cephalothorax, maxillæ, labium, and sternum offer no distinctive peculiarities in form, though the two latter are more suffused with brown than in *T. culta*; the eyes are similar in position, and the falces are perhaps a little shorter and proportionally stronger; the legs are also stronger and more conspicuously furnished with spines; the palpi are a little shorter, the digital joint and palpal organs not quite so large;

the former has no corneous projection at its base, though there is a short curved one near it, connected with the palpal organs. These organs consist chiefly of a large, prominent, glossy, and somewhat pear-shaped lobe, marked on its surface with sinuous lines: near the narrow end of this lobe is another of a somewhat cylindrical form, projecting beyond the extremity of the digital joint. The *abdomen* is rather short, very convex above, and projects greatly over the base of the cephalothorax; it is of a silvery whitish-yellow colour, with ill-defined intersecting lines, and has on its upperside six perceptible (but slightly defined) raised obtuse points—three on either side of the fore half: these points are best seen when the spider is looked at in profile; the position of each is also defined by a cloudy or blackish spot of greater or less extent upon or near it. The second two of these raised points (one on either side) are connected by a well-defined, curved, strongish black line; and from the centre of this line a more or less well-defined narrow band of the same colour runs back towards the hinder part of the abdomen, narrowing as it goes, and sending out short oblique black lines on each side near its hinder extremity; a little way behind the last two raised points this band and the two oblique lines join a large, well-defined, somewhat *lyre-shaped* (in some examples a mere *oblong*) marking of a deep brownish-black colour, reaching to the spinners, and divided longitudinally by a wedge-shaped more or less regular bar of silvery spots. The underside of the abdomen is brown-black, marked with some silvery bars and spots forming a broken curved line on either side from the spiracles to the spinners, encircling which the two lines unite. From near the spinners a broad slightly curved bar of black-brown, narrowing gradually, runs along the side of the abdomen; and beneath this is another of somewhat the same character, but shorter and less conspicuous. Some little variety exists in different individuals in the degree of distinctness and extent of the above-described pattern: in the *male* it is altogether less distinct than in the female, and in some examples of the latter sex the central longitudinal black bar on the upperside sends out other lateral oblique lines besides the two above mentioned; in other examples the transverse curved bar is either very faintly defined or entirely obsolete.

Eleven individuals (ten ♀ adult and immature, and one ♂ adult) were contained in Mr. Nietner's Ceylon collection.

TETRAGNATHA CEYLONICA, n. sp. Pl. XIII. figs. 83 to 88.

♂ adult, length 4 lines; ♀ adult, 4 lines.

This species is scarcely distinguishable, in general size and appearance, from the European *T. extensa*, but may at once be distinguished, both from that species and others having a long cylindrical abdomen, by the position of the eyes: the palpi also of the male differ in structure from those of *T. extensa*, as also does the dentition of the falces.

In the present species the eyes of each of the two lateral pairs are nearly contiguous, the fore eye of each being very minute and the smallest of the eight, the posterior eye of each, together with those of the hind central pair, form an equally divided curved line, the curve directed forwards; the eyes of the front central pair are seated on a strongish tubercular prominence, and are nearer together than those of the hinder pair, describing, with them, nearly a square, which has its widest side behind; the form of the space thus occupied by the eyes is somewhat of a crescent. The height of the *clypeus* is about equal to the diameter of one of the fore central eyes, which are immediately above it. The *falces* are long, strong, projecting, and very divergent: enlarging beyond the middle and narrowing again at the extremities, they are a little constricted close behind the insertion of the fang, which is moderately long, simple, and curved: besides a continuous longitudinal row of fine teeth on their inner sides, the falces have five of larger dimensions (four sharp- and one obtuse-pointed) distributed near their extremities; the largest of the sharp-pointed ones projects prominently inwards from their upper part towards the inner margin; another (longer, stronger, curved forwards, obtuse at its extremity, which is also bifid) is situated towards the outer side, and nearer the insertion of the fang; the others are (one above and two below) between the fang and the largest of the five teeth. The *palpi* are similar in general structure and appearance to those of *T. extensa*; but the cubital joints have a small, curved, rather obtuse, and somewhat tooth-like spine at their upper extremity; the radials also have a small acute spiny projection at their upper extremity; *digital joint* very slightly longer than the radial, and of the same irregular form as that of *T. extensa*. The *palpal* organs differ but very little in structure from those of that species.

Four specimens, three adult males and one adult female, were found in Mr. Nietner's Ceylon collection; and it is a species hitherto, I believe, undescribed. But notwithstanding the mi-